

REMARKS/ARGUMENTS

Favorable reconsideration of this application, in view of the present amendment and in light of the following discussion, is respectfully requested.

Claims 1 and 3-8 are pending. In the present amendment, Claims 1 and 3-8 are currently amended and Claim 2 is canceled without prejudice or disclaimer. Support for the present amendment can be found in the original specification, for example, at page 3, lines 16-28, in Figures 1-3, and in original Claim 2. Thus, it is respectfully submitted that no new matter is added.

In the outstanding Office Action, Claims 1-8 were objected to; Claims 2-4 were rejected under 35 U.S.C. § 112, second paragraph; Claim 1 was rejected under 35 U.S.C. § 102(b) as anticipated by Kemerer et al. (U.S. Patent No. 4,128,369, hereinafter "Kemerer"); Claim 2 was rejected under 35 U.S.C. § 103(a) as unpatentable over Kemerer in view of DeMello et al. (U.S. Patent No. 5,607,629, hereinafter "DeMello"); Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as unpatentable over Kemerer in view of DeMello, and further in view of LeGourd (U.S. Patent No. 3,314,398); and Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as unpatentable over Kemerer in view of LeGourd.

The specification is hereby amended to correct minor informalities in the Abstract. It is respectfully submitted that no new matter is added.

Regarding the objection to Claims 5-8 as being in improper multiple dependent form, it is noted that Claims 5-8 are hereby amended to no longer be in multiple dependent form. Thus, it is respectfully requested that Claims 5-8 be treated on the merits.

Regarding the objection to Claims 1-4, each antecedent basis issue listed in section 2 of the Office Action is hereby addressed. It is respectfully submitted that no new matter is added. Thus, it is respectfully requested that the objection to Claims 1-4 be withdrawn.

In response to the rejection of Claims 2-4 under 35 U.S.C. § 112, second paragraph, it is noted that Claim 2 is hereby canceled. Further, it is respectfully submitted that each pending claim includes only a single sentence. Thus, it is respectfully submitted that all pending claims are believed to be definite, and no further rejection on that basis is anticipated. However, if the Examiner disagrees, the Examiner is invited to telephone the undersigned who will be happy to work with the Examiner in a joint effort to derive mutually acceptable language.

Turning now to the rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a), Applicants respectfully request reconsideration of these rejections and traverse these rejections, as discussed below.

Amended Claim 1 recites:

An extrusion molding machine, comprising:

a storage bin to supply a foam material to be molded into a foam body;

a cylinder and a screw to mix and transport the foam material from the storage bin;

a mold provided at a front end of the cylinder;

a tank connected to a piping that connects the storage bin and the screw, and the tank stores a foaming fluid that foams the foam material; and

a heater to heat the foam material and the foaming fluid by a plurality of stages from a base end of the cylinder near the storage bin to the front end from an initial temperature below a boiling point of the foaming fluid to a final temperature at which the foaming fluid is completely vaporized, wherein

the foaming fluid is water, and

a first stage of the plurality of stages of the heater is set above 60°C and below 100°C, and a final stage of the plurality of stages is set above 160°C and below 240°C.

The extrusion molding machine as cited in Claim 1 includes a heater to heat the foam material and the foaming fluid, which is water, by a plurality of stages in the cylinder.

Additionally, a first stage of the plurality of stages of the heater is set above 60°C and below 100°C and a final stage of the plurality of stages is set above 160°C and below 240°C. With such an arrangement, since the foam material within a cylinder is gradually heated, even when a foaming fluid with a volume that increases with heat is sued, abrupt inflation of the foam material and consequent backflow can be prevented, thus stabilizing the quality of the foam body. It is respectfully submitted that the cited references do not disclose or suggest every feature recited in amended Claim 1.

Kemerer describes an apparatus that enables large area products to be made which extend up to 20 to 40 feet long.¹ The apparatus shown in Figure 10A of Kemerer includes a heating zone 18 in which resistance heaters 21-1 through 21-4 are located.² Additionally, Kemerer describes that the power supplied to the heaters 21-1 through 21-4 can be turned on or off such that the heat output of the heaters 21-1 through 21-4 can be controlled.³ Further, there is no recitation in Kemerer for specific temperatures of each of the heaters 21-1 through 21-4.

However, it is respectfully submitted that Kemerer does not disclose or suggest “a first stage of the plurality of stages of the heater is set above 60°C and below 100°C, and a final stage of the plurality of stages is set above 160°C and below 240°C,” as recited in amended Claim 1.

Instead, Kemerer describes that the material is preferably heated to a moderate temperature above 180°F but not above 400°F, but Kemerer does not disclose that the individual heaters 21-1 through 21-4 should have different individual heat outputs. Thus, Kemerer does not disclose or suggest that a first one of the heaters 21-1 through 21-4 be set above 60°C and below 100°C or that a final one of the heaters 21-1 through 21-4 be set above

¹ See Kemerer, at column 1, lines 15-19.

² See Kemerer, at column 18, lines 36-45 and in Figure 10A.

³ See Kemerer, at column 18, lines 48-56.

160°C and below 240°C. Accordingly, it is respectfully submitted that the heaters 21-1 through 21-4 described in Kemerer are not the “heater” recited in amended Claim 1.

Accordingly, it is respectfully submitted that Kemerer does not disclose or suggest every feature recited in amended Claim 1. Thus, it is respectfully submitted that the rejection of Claim 1 as anticipated by Kemerer be withdrawn.

Regarding the rejection of Claim 2 as unpatentable over Kemerer in view of DeMello, it is noted that Claim 2 is hereby canceled. Accordingly, it is respectfully submitted that this rejection is moot.

Regarding the rejection of Claims 3 and 4 as unpatentable over Kemerer in view of DeMello, and further in view of LeGourd, it is noted that Claims 3 and 4 are dependent on Claim 1, and thus are believed to be patentable for at least the reasons discussed above with respect to Claim 1. Further, it is respectfully submitted that the cited references do not cure the above-noted deficiencies of Kemerer.

DeMello describes an extrusion apparatus for extruding a thermoplastic elastomer including an extruder barrel 10 that has a screw 12 therein.⁴ Additionally, DeMello describes that the resin pellets in the extruder barrel 10 are melted due to a speed and temperature profile of the screw 12, the temperature profile being illustrated in Table 1.⁵ However, as can be seen in Table 1 of DeMello, the temperature zones do not correspond to the claimed plurality of stages. Thus, DeMello does not cure the above-noted deficiencies of Kemerer.

LeGourd describes an apparatus for feeding animals.⁶ Specifically, LeGourd describes that the apparatus includes a tank 8 to hold necessary water and that the tank 8 is provided with a heating or cooling device.⁷ However, LeGourd does not disclose or suggest that the tank 8 includes different heating stages. Thus, it is respectfully submitted that

⁴ See DeMello, at column 3, lines 31-32 and at column 4, lines 16-17, and in Figure 1.

⁵ See DeMello, at column 3, lines 42-44 and in column 4, lines 23-47.

⁶ See LeGourd, at column 1, lines 11 and 12.

⁷ See LeGourd, at column 1, lines 59-61 and in Figure 1.

LeGourd does not cure the above noted deficiencies of Kemerer and DeMello with respect to Claim 1.

Accordingly, it is respectfully submitted that Claims 3 and 4 patentably define over Kemerer in view of DeMello, and further in view of LeGourd.

Turning now to the rejection of Claims 3 and 4 as unpatentable over Kemerer in view of LeGourd, as discussed above, it is respectfully submitted that the combination of Kemerer and LeGourd does not disclose or suggest every feature recited in amended Claim 1. Thus, it is respectfully requested that the rejection of Claims 3 and 4 as unpatentable over Kemerer in view of LeGourd be withdrawn.

As discussed above, Claims 5-8 were not treated on their merits in the Office Action. However, as Claims 5-8 are no longer in multiple dependent form, Applicants respectfully request that these claims be treated on the merits in the next Office Action.

It is noted that Claims 5-7 are dependent on Claim 1, and thus are believed to be patentable over the cited references for at least the reasons discussed above with respect to Claim 1.

Additionally, Claim 8 is hereby amended to be in independent form. It is noted that Claim 8 recites, in part, an extrusion molding machine, including a heater and that “a first stage of the plurality of stages of the heater is set above 60°C and below 100°C, and a final stage of the plurality of stages is set above 160°C and below 240°C.” Accordingly, it is respectfully submitted that the cited references do not disclose or suggest every feature recited in amended Claim 8.

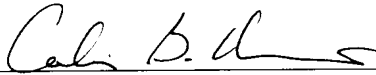
Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. A Notice of Allowance is earnestly solicited.

Respectfully submitted,

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